



UNITED STATES DEPARTMENT OF COMMERCE  
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*BCL*

APPLICATION NO/ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
097043,171	03/12/98	MCLAUGHLIN	S 36-1136

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LM01/0706

EXAMINER

AZAD, A

ART UNIT	PAPER
2741	7

07/06/00

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.

09/043,171

Applicant(s)

MCLAUGHLIN ET AL.

Examiner

ABUL K. AZAD

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2000.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11, 14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 14 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some \* c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) \_\_\_\_\_.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

## Attachment(s)

- 14) ☒ Notice of References Cited (PTO-892)
- 15) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 16) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 17) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 18) ☐ Notice of Informal Patent Application (PTO-152)
- 19) ☐ Other: \_\_\_\_\_.

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## **DETAILED ACTION**

### ***Response to Amendment***

1. This is in response to the communication filed on April 20, 2000.
2. Claims 1-11 and 14-15 are pending in this action. Claims 1 and 14 have been amended. Claims 12 and 13 have been canceled.
3. Applicant's arguments with respect to claims 1-11 and 14-15 have been fully considered but they are not deemed to be persuasive. For examiner's response to the applicant's arguments or comments, see the detailed discussion in the remark section.

### ***Remarks***

4. The applicant argue as "in Mindlin, the steps of "embedding" involves representing a waveform in a state sequence space and is part of the analysis of a waveform rather than its synthesis. Mindlin does not disclose step (b) of claim 1 of a waveform of generating successful waveform samples because the embedding step disclosed in Mindlin relates to analysis of a chaotic time series and does not relate to modeling or reproducing such a series. Moreover, the topological analysis in Mindlin is used to generate a template. The template is used to provide a model for use in generating a chaotic time series of data. Accordingly, Mindlin does not teach the generation of a synthetic waveform sample using steps (b) through (d) of claim 1."

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The examiner disagrees with the applicant's interpretation. Mindlin teaches analysis and synthesis of a waveform, see section 4 and 5. Maindlin teaches synthesis of a waveform in section 5 (Relative rotation rate and linking numbers) see Fig. 7 and 8, where he uses Hilbert transformation. So that Maindlin teaches generating waveform sample using steps (b) through (d) of claim 1.

As per claim 14, applicant argues as "in contrast, Hirokawa's speech synthesizer concatenates segments of recorded sounds and does not generate sounds in the manner recited in the claim 1."

The examiner notes that there is no relation between claim 1 and claim 14 each of the claims is different independent claim.

Applicant further argues as "in particular, Hirokawa's synthesizer does not generate a model of the evolution of the sound over a short time interval or a waveform. Moreover, Hirokawa does not use a generated waveform segment to calculate successive waveform segments. Accordingly, Hirokawa does not anticipate claim 14, which includes the limitation of "calculating each successive output value from an immediately-preceding value using said evolution model".

The examiner notes that Hirokawa teaches generate waveform segments to calculate successive waveform segment in section 6.( Waveform modification). Hirokawa further teaches, in section 6. 4, (Waveform Segment Interpolation Process) that the selected waveform segments are interpolated between the last pitch waveform of the preceding segment and a top pitch waveform of the succeeding segment to avoid

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rapid variation in voice spectral contour and waveform shape, which is clearly anticipate the limitation stated above.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3-11, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Mindlin et al. (Topological analysis and synthesis of chaotic time series).

Mindlin is a prior art of record. The rejection set forth in Paper No. 3 is hereby incorporated by reference.

7. Claim 14 is rejected under 35 U.S.C. 102(b) as being anticipated by Hirokawa et al. (High Quality Speech Synthesis System Based on Waveform Concatenation of Phoneme Segment).

Hirokawa is a prior art of record. The rejection set forth in paper No. 3 is hereby incorporated by reference.

8. Claim 14 is rejected under 35 U.S.C. 102(b) as being anticipated by Kitoh et al. (US 5,111,505).

As per claim 14, Kitoh teaches, "a method of synthesising a cyclical sound intermediate between two other cyclical sounds, for each of which a succession

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of sample values corresponding to a plurality of cycles are stored, comprising the steps of generating interpolated waveform samples consisting of a succession of values each of which is interpolated waveform samples consisting of succession of values each of which is interpolated from a pair of points, one each respectively from a corresponding portions from a cycle of each of the stored waveforms; generating a model of the evaluation, over a short time interval, of the interpolated waveform; and calculating each successive output value from an immediately preceding values using said evolution model." (col. 2, lines 40-68, see Figs. 4, 5, 6 and 7).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mindlin et al. as applied to claim 1 above.

As per claim 2, Mindlin does not explicitly teach waveform comprises a voiced speech. However, Mindlin does teach periodic orbits (Page 237). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to

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use a voice speech signal in Mindlin because voice is a short-term periodic signal, which will give a practical application of the theory.

### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Abul K. Azad** whose telephone number is **(703) 305-3838**.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **David R. Hudspeth**, can be reached at **(703) 308-4825**.

Any response to this action should be mailed to:

**Box AF**

**Commissioner for Patents**

**Washington, D.C. 20231**

Or faxed to:

**(703) 305-9508**

(For informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is **(703) 305-3900**.

Abul K. Azad

July 2, 2000

  
**Richmond Dorvil**  
**Primary Examiner**